

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A soil aerator, comprising:  
a frame assembly having a front end and a rear end;  
an aeration device coupled to the frame assembly;  
a front axle member to support the frame assembly, the front axle member located forward of the aeration device;  
a rear axle member to support the frame assembly, the rear axle member located aft of the aeration device;  
a weight transfer system coupled to the frame assembly, the weight transfer system having a biasing member that applies a moment to the frame assembly to transfer a portion of the frame assembly and aeration device's combined weight to the front axle member or the rear axle member,  
wherein the frame assembly is hinged and the aeration device is urged about the hinge axis by the weight transfer system.
2. (Canceled).
3. (Previously presented) The soil aerator of claim 1, wherein the front axle member is coupled to a roller.
4. (Original) The soil aerator of claim 3, further comprising a second rear axle member and wherein each rear axle member is coupled to a wheel.

5. (Original) The soil aerator of claim 1, wherein the weight transfer system includes a first spring member coupled to the frame assembly.
6. (Previously presented) The soil aerator of claim 5, wherein the weight transfer system further includes a second spring member coupled to the rear axle member and the frame assembly.
7. (Original) The soil aeration of claim 1, wherein the weight transfer system is adapted to transfer a variable fraction of the weight of the aeration device to at least one of the front axle member and the rear axle member such that a head weight of the aeration device can be varied.
8. (Original) The soil aerator of claim 1, comprising at least two rear axle members each coupled to the frame by a separate suspension system.
9. (Previously presented) The soil aerator of claim 1, wherein the weight transfer system includes at least two spring members that apply opposite moments to the frame assembly.
10. (Original) The soil aerator of claim 1, wherein the weight transfer system includes a constant force spring.
11. (Previously presented) The soil aerator of claim 1, wherein the aeration device includes a planetary gear system to rotate and translate a plurality of tine shafts bearing aeration tines.
12. (Previously presented) The soil aerator of claim 11, wherein each aeration tine includes an arcuate soil fracturing edge.
13. (Currently Amended) A soil aerator, comprising:  
a frame assembly having a front end and rear end;  
means for aerating soil coupled to the frame assembly;

front support means to support the frame assembly as it travels across a ground surface,  
the front frame support means located forward of the aerating means;

rear support means to support the frame assembly as it travels across the ground surface,  
the rear support means located aft of the aerating means;

weight transfer means for applying a moment to the frame assembly, the weight transfer  
means including a biasing means that applies a moment to the frame assembly to transfer a  
portion of the combined weight of the frame assembly and the aerating means to the front  
support means or the rear support means,

wherein the frame assembly is hinged and the aerating means is urged about the hinge  
axis by the weight transfer means.

14. (Canceled).

15. (Previously presented) The soil aerator of claim 13, wherein the front support means  
includes a roller.

16. (Original) The soil aerator of claim 15, wherein the rear support means comprises at least  
two rear axle members and wherein the rear axle members are coupled to separate wheels.

17. (Previously presented) The soil aerator of claim 13, wherein the weight transfer means  
includes a first spring member coupled to the frame assembly.

18. (Previously presented) The soil aerator of claim 17, wherein the weight transfer means  
further includes a second spring member coupled to the rear support means and the frame  
assembly.

19. (Original) The soil aerator of claim 13, wherein the weight transfer means is adapted to  
transfer a variable fraction of the weight of the aerating means to the front support means or the  
rear support means such that a head weight of the aerating means can be varied.

20. (Previously presented) The soil aerator of claim 13, comprising at least two rear axle members each coupled to the frame assembly-by a separate suspension system.

21. (Previously presented) The soil aerator of claim 13, wherein the weight transfer means includes at least two spring members that apply opposite moments to the frame assembly.

22. (Canceled).

23. (Original) The soil aerator of claim 13, wherein the aerating means includes a planetary gear system to rotate and translate a plurality of tine shafts bearing aeration tines.

24. (Original) The soil aerator of claim 23, wherein each aeration tine includes an arcuate soil fracturing edge.

25 (New) A soil aerator, comprising:

a frame assembly having a front end and a rear end;

an aeration device coupled to the frame assembly;

a front axle member to support the frame assembly, the front axle member located forward of the aeration device;

a rear axle member to support the frame assembly, the rear axle member located aft of the aeration device;

a weight transfer system coupled to the frame assembly, the weight transfer system having a biasing member that applies a moment to the frame assembly to transfer a portion of the frame assembly and aeration device's combined weight to the front axle member or the rear axle member, wherein the weight transfer system includes a constant force spring.